Kentucky Department of Agriculture News
Bill Clary, Director of Public Relations, Kentucky Department of Agriculture

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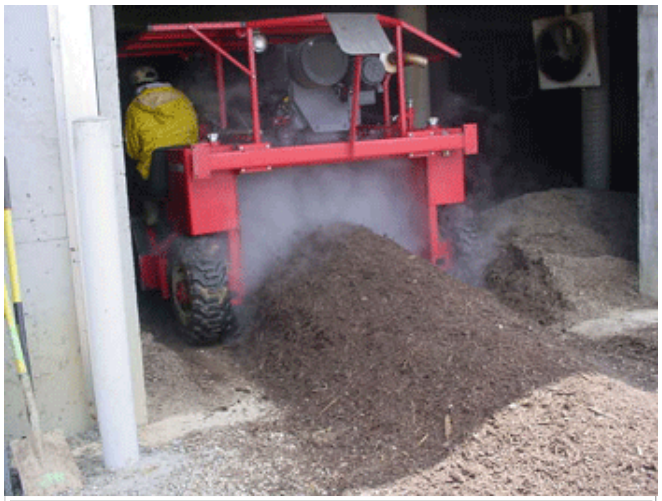
Experimental hog building composts manure for dry fertilizer

By **WARREN BEELER**, *Kentucky Agricultural News*

A research project on a family hog farm in Daviess County may change the way manure is utilized – and address a longstanding perception problem with large production units.



J.W. O'Bryan uses a "compost cat" to stir the compost. (Photo by Warren Beeler)

Father-and-son producers Jerry and J.W. O'Bryan built a 4,000-head feeding unit designed to compost the manure. The four-room unit includes a deep pit style building with the bottom of the pit sitting on top of the ground. A layer of sawdust or some other carbon source is applied to the floor of the pit, which can be heated from a hot water system in the floor. Compost is stirred with a special machine as needed.

For composting to work, the product must reach a temperature of at least 135 degrees. Some temperature readings have reached 150 degrees, and if documentation proves the compost went through at least two prolonged heats of more than 150 degrees, then it could be considered organic, which would increase the value significantly. The compost is removed and placed in a compost building away from the hog unit to be finished. This process takes liquid manure that is 75-80 percent water and turns it into dry, high-nutrient fertilizer that is easy to transport. Because of its added value, organic fertilizer may be better sold in 50-pound units for use in flower beds and greenhouses than in bulk for use on cropland.

Swine production units have vastly increased in size over the past 20 years due in large part to economics of production and advantages in marketing. The O'Bryan operation is the largest swine producer based in Kentucky with approximately 4,500 sows. As units have gotten larger the disposal of manure has become a major problem and a real perception issue for the industry. Rising fertilizer prices have enhanced the value of animal waste as a fertilizer, but a limited amount of land is available for fertilization, and transporting liquid manure longer distances to reach more land created added expense. Composting manure into dry fertilizer addresses the transportation problem.

Dr. Richard Coffey and Dr. Doug Overhults with the University of Kentucky are conducting the research, and the Kentucky Agricultural Development Board is funding the study. The researchers hope the process will limit odor, capture all nutrients produced and continue to improve the pigs' comfort and health. The dry, easily transportable fertilizer potentially opens new markets for the composted product. This large-scale composting research trial, if successful, would allow the large confinement producer to utilize every drop of manure and become a greener, more environmentally friendly neighbor. The success of this project could well change the way swine buildings are constructed and perceived.

The deep pit style building is designed so manure falls through the slats (top) and mixes with sawdust or some other carbon source in the pit. (Photo by Warren Beeler)

Kentucky Department of Agriculture
32 Fountain Place
Frankfort, Kentucky 40601
Phone: (502) 564-4696
Fax: (502) 564-2133

ag.web@kyagr.com
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